(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization

International Bureau





(43) International Publication Date 7 July 2005 (07.07.2005)

PCT

(10) International Publication Number WO 2005/062391 A1

(51) International Patent Classification⁷: C09K 11/08

H01L 33/00,

(21) International Application Number:

PCT/KR2003/002897

(22) International Filing Date:

30 December 2003 (30.12.2003)

(25) Filing Language:

Korean

(26) Publication Language:

English

(30) Priority Data: 10-2003-0095821

23 December 2003 (23.12.2003) KR

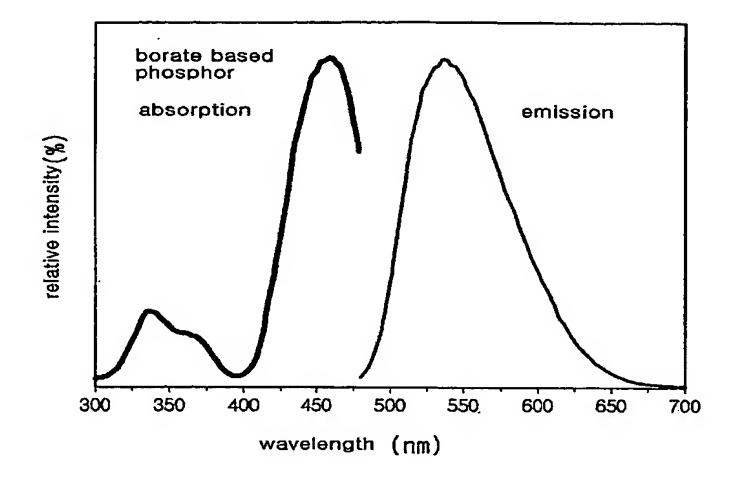
- (71) Applicant (for all designated States except US): LUX-PIA CO., LTD. [KR/KR]; Jeonju Science Industrial Park, 948-1 Dunsan-ri, Bongdong-eup, 565-902 Wanju-city, Jeollabuk-do (KR).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): LEE, Dong-Yeoul [KR/KR]; 11/2, 540 Jukdong-dong, Gangseo-gu, 618-320 Busan-city (KR). KIM, Yong-Tae [KR/KR]; 103-509

Hyundai apt., 1819-2 Songcheon 2-dong, Deokjin-gu, 561-302 Jeonju-city, Jeollabuk-do (KR). KIM, Eun-Joung [KR/KR]; 1581-21 Gwakji-ri, Aewol-eup, 695-903 Bukjeju-gun, Bukjeju-do (KR).

- (74) Agent: YOU ME PATENT & LAW FIRM; Seolim Bldg., 649-10 Yoksam-dong, Kangnam-ku, Seoul 135-080 (KR).
- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (regional): ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: YELLOW EMITTING PHOSPHOR AND WHITE SEMICONDUCTOR LIGHT EMITTING DEVICE INCORPORATING THE SAME



(57) Abstract: The present invention relates to a yellow phosphor represented by a general formula of $A_{(1-y)3}D_{5-x}$ E_x O_{12} : Ce_y (wherein: A is at least one element selected from the group consisting of Y, Lu, Sc, La, Gd and Sm; D is at least one element selected from the group consisting of B and Fe; $0 \le x < 0.5$; and $0.0001 \le y < 0.5$), and a white semiconductor light emitting device incorporating the same. The white semiconductor light emitting device comprises a semiconductor light emitting diode, and a phosphor coating layer. The phosphor coating layer comprises yellow phosphor and optionally zinc selenium-based red phosphor that absorb a portion of light emitted by the semiconductor light emitting diode and emits light of wavelength different from that of the absorbed light and a transparent resin. The white semiconductor light emitting device has excellent color rendering and experiences only extremely low degrees of deterioration in emission efficiency in a long period of service.



WO 2005/062391 A1



Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

-}